

We claim:

1. A method of encoding substantially imperceptible auxiliary information into a video signal including at least one video object, the method comprising:

5 steganographically encoding object information about the video object into the video signal; and

associating the object information with an action, where the action is performed in response to user selection of the video object through a user interface while the video signal is playing.

10 2. The method of claim 1 wherein the video signal is steganographically encoded with at least two identifiers, each identifier corresponding to distinct video objects in frames of the video signal, and each identifier being associated with actions relating to the corresponding video objects.

15 3. The method of claim 1 wherein the object information is encoded in a watermark signal that covers a portion of screen area of frames in the video signal where the video object is located.

20 4. The method of claim 1 wherein object information for at least two different video objects in the video signal is steganographically encoded in different portions of frames of the video signals where the corresponding video objects are located.

5. The method of claim 1 wherein the object information includes a screen location information indicating where the video object is located in the video signal.

25 6. The method of claim 5 wherein object information is encoded for at least two different video objects in the video signal, and the object information includes location information indicating where the video objects are located in the video signal.

7. The method of claim 1 wherein the object information is encoded in a pre-recorded video object, which forms part of the video signal.

5 8. The method of claim 7 wherein the pre-recorded video object is composited with video frames to form the video signal.

9. The method of claim 7 wherein the pre-recorded video object is composited with at least one other video object to form the video signal, where the video objects are each steganographically encoded with object specific information.

10 10. The method of claim 1 wherein the video object is encoded with the object information as part of a process of capturing the video signal of physical objects, and the object information pertains to the physical objects captured in the video signal.

15 11. The method of claim 10 wherein the object information is encoded as part of a process of capturing the video signal during a live broadcast or transmission of the video signal.

20 12. The method of claim 10 wherein object information is encoded for at least two different video objects depicted in frames of the video signal.

25 13. The method of claim 1 wherein object information is encoded for at least two different video objects such that the object information is synchronized with corresponding video objects depicted in the video signal during playback.

14. A method for using a watermark encoded into a video signal or in an audio track accompanying the video signal, where the watermark comprises information regarding a video object in the video signal, the method comprising:  
decoding the watermark information;

receiving a user selection of the video object; and  
executing an action associated with the video object information.

15. The method of claim 14 wherein the video signal includes watermark  
5 information for at least two different video objects in the video signal, and the watermark  
information associates the video objects with object actions or information.

16. The method of claim 15 wherein the audio track includes watermark  
information for at least two different video objects appearing in the same frames of the  
10 video signal, and the watermark information associates the video objects with object  
specific actions or information.

17. A system for creating watermark enabled video objects comprising:  
an encoder for encoding a watermark in a video sequence or accompanying audio  
15 track corresponding to a video object or objects in the video sequence; and  
a database system for associating the watermark with an action or information  
such that the watermark is operable to link the video object or objects to a related action  
or information during playback of the video sequence.

20 18. The system of claim 17 wherein the watermark is operable to link a  
corresponding video object to an action or information when a user selects the video  
object during playback of the video sequence.

25 19. The system of claim 17 wherein the encoder encodes a video object with a  
watermark and composites the encoded video object with another video signal to create  
the video sequence.

20. A system for processing a watermark enabled video object in a video signal  
comprising:

a watermark decoder for decoding a watermark carrying object specific information from the video signal and linking object specific information to an action or information; and

a rendering system for rendering the action or information.

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21. The system of claim 20 including a user interface for enabling a user to select a watermark enabled video object during playback of the video signal.

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22. The system of claim 21 wherein the user interface includes the rendering system for rendering the action or information of the selected video object.

23. The system of claim 21 wherein the user interface is in a separate device from the watermark decoder.

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24. The system of claim 20 including a network interface for communicating information decoded from a watermark to a remote device, which in response to the information, links the information to an action or additional information about a video object.

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25. A method for encoding substantially imperceptible auxiliary information into an audio track of a video signal including at least one video object, the method comprising:

steganographically encoding object specific information about the video object into the audio track; and

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associating the object specific information with an action, where the action is performed in response to user selection of the video object through a user interface while the video signal is playing.

26. The method of claim 25 wherein the object specific information includes an identifier and screen location of the video object.

27. The method of claim 25 wherein the object specific information includes  
5 information for at least two different video objects.

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